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ABSTRACT

A study investigated whether the academic writing task surveys conducted at American universities reflect accurately the need for student academic writing skills. These surveys are used as a basis for designing composition courses for both native English-speakers and students of English as a second language. The study is restricted to surveys in the last ten years that have examined undergraduate science and technology writing tasks. Eight major surveys are considered. Five elicited information with questionnaires, and three examined actual student writing assignments. Shortcomings in the surveys are noted, including inconsistency in terms used to identify academic writing genres, inappropriate subject sampling, inappropriate evaluation criteria (writing assignment types such as in-class quizzes and examinations), and classification of writing assignment according to the requisite skills. It is concluded that each discipline is a separate discourse community, academic writing courses should focus on only one discipline. A 27-item bibliography is included. (MSE)

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Academic Writing Task Surveys: The Need for a Fresh Approach

GEORGE BRAINE

At most American universities, the teaching of composition to undergraduate students is "centralized" (Kinneavy, 1983) in the English departments at lower-division levels. Historically, lower division composition courses were created as "service" courses to the rest of the academy (Berlin, 1985), a role they continue to play to date. For instance, the objective of the *Freshman English Course for Foreign Students* at the University of Texas at Austin is "to help students to read and write English with the skill they will need to succeed academically at the university" (Underwood, n.d.).

However, some critics maintain that freshman English is not performing its assigned task. Mike Rose (1983) complains that these courses are "self-contained", having "little conceptual or practical connection to the larger academic writing environment" (p. 109). Blair (1988) criticizes freshman English courses for imposing the English department's own "brand of writing" (p. 384) on students from other disciplines. In the field of Teaching English as a Foreign/Second Language (TEFL/TESL), Horowitz (1986), Johns (1987), Shih (1986) and Wallace (1985) have recently renewed the demand for the integration of college composition courses with academic discourse.

In order to design composition courses that teach academic discourse, the writing tasks of various disciplines must be determined first. Over the years, researchers such as Behrens (1978), Kroll (1979), Ostler (1980), Johns (1981), Friedrichs and Pearson (1981), Rose (1983), Eblen (1984), Bridgeman and Carlson (1984), Kiniry and Strenski (1985), Wallace (1985), and Horowitz (1986) have stressed the need for systematic attempts to identify academic (writing) tasks. However, on what basis can researchers decide which disciplines, and which writing tasks from those disciplines, merit investigation and integration with composition courses? An obvious choice would be the disciplines which attract a significant population of students enrolled in composition courses, and the most frequently assigned writing tasks from those disciplines.

According to the Institute of International education (IIE), more than 40 percent of the foreign undergraduate students enrolled at

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American universities major in science and technology (Zikopoulos and Julian, 1986). At some institutions, the percentage may be even higher. For instance, at The University of Texas at Austin, which has the third highest enrollment of foreign students in the nation, 63 percent of the undergraduate foreign students registered during the 1987/88 academic year were enrolled in the College of Natural Sciences and the College of Engineering ("Statistical Handbook"). All undergraduate foreign students, like the majority of their American counterparts, are required to take freshman English.

Noll (1964) has delineated the differences between the scientific and humanistic methods, contrasting the precise nature of the former with the subjective nature of the latter. Trimble (1985), based on his examination of scientific and technical writing, defines scientific discourse as the "presentation of facts, hypotheses," and as not being concerned with "forms of English that editorialize, express emotions or emotionally based argument or [is] fictional or poetic in nature." (p. 10).

Thus, the formation of composition courses for undergraduate foreign students majoring in science and technology appears to be justified in three contexts: 1) the presence of a large population of undergraduate foreign students who major in science and technology; 2) university regulations which require these students to take composition courses at the lower-division level; and 3) the existence of a well-defined method and discourse conventions common to scientific disciplines. If reliable data on the discourse conventions of undergraduate science and technology courses could be obtained, such data could form the basis for the design of integrated lower-division composition courses.

The literature on Needs Analysis records a large number of surveys which have attempted to determine the academic tasks required of students at American universities. However, most of these surveys have recently been criticized by Horowitz (1986), Raimes (1987) and Zamel (1987). Spack (1988), claiming that academic writing has not yet been properly defined, has gone so far as to state that academic writing should therefore be taught by teachers of the disciplines, and not by English instructors.

The purpose of this paper, therefore, is to evaluate the academic writing task surveys conducted at American universities in order to determine if they provide adequate data on academic writing. To keep its scope within reasonable limits, this paper will only consider surveys which have examined science and technology writing tasks at the undergraduate level during the last ten years.

ACADEMIC WRITING TASK SURVEYS

To date, the identification of academic writing tasks has been the sole objective of only a few surveys. Instead, most researchers have blended other objectives such as the determination of faculty views, evaluations and expectations of student writing, and students' views and expectations of writing programs into their surveys. Thus, the determination of academic writing tasks often comprises only a segment of a larger study.

Behrens' (1978) study, which has earned praise for its thoroughness and care in presenting conclusions, was conducted among 128 faculty members at the American University in Washington, DC. It was designed "to measure faculty perceptions of student literacy" and "to discuss what kinds of writing, and how much of it, is being assigned in disciplines other than literature" (pp. 54-55). Behrens divided the faculty into four broad academic areas: humanities, sciences, social sciences, and professional studies. The sciences comprised twenty faculty members from biology, chemistry, math and statistics, and physics.

In the questionnaire used for the survey, faculty were asked to classify papers according to three types: reports, themes or essays, and research papers. Behrens defines reports as "papers of limited scope providing factual discussion of the results of a piece of research", themes or essays as "papers offering conclusions or opinions based upon experiences and/or reading" and research papers as "papers based on extensive research of written material on a subject" (p. 57).

Of the 288 courses reported in the survey, 86 percent required papers of some type. The sciences ranked second in the number of papers assigned, 61 percent of the courses requiring papers. None of the undergraduate courses in the sciences assigned *themes or essays*, 93 percent assigned *reports* and 8 percent assigned *research papers*.

Behrens also notes that humanities and science professors assign papers of the shortest length and that, 95 percent of the time, science professors designate a topic for the papers. In 21 percent of the science courses, the professors did not specify the procedures (format, types of evidence to consider, reference sources, etc.) to be followed. Some procedures were specified in 42 percent of the courses, and in 37 percent, procedures were specified at length.

The faculty were also requested to provide information on examinations. Behrens notes that 85 percent of all undergraduate courses required a final examination. In the science courses, 82 percent had in-class final examinations, 64 percent had midterm examinations, and 36 percent gave regular quizzes. Take-home examinations were not assigned in any of the science courses.

In 1979, Kroll used a three-part questionnaire to determine "the past, present and future writing needs of students" (p. 219), which would indicate the types of writing students should be exposed to in composition courses. The questionnaire was distributed among 35 students enrolled in freshman English courses for international students and 20 native-speaker students enrolled in regular freshman English at the University of Southern California. Although exact figures were not quoted, the majority of the international students in the survey were majoring in engineering, science and business.

In the questionnaire, Kroll classified past writing needs into nine tasks, ranging from "fill out questionnaires" to "write reports for classes other than for English courses." Eighteen percent of the international students stated that they had never written reports for disciplines other than English.

Under "current writing needs," Kroll sought information on six types of academic writing tasks. Of the international students, 33 percent wrote papers which "integrate[d] mathematical or statistical data into a report," 54 percent wrote "reports of lab experiments in continuous discourse," and 54 percent wrote "term papers." The corresponding figures for the native-speaker students were 15 percent, 21 percent and 55 percent. According to Kroll, the above figures are attributable to more foreign students majoring in scientific subjects than Americans. While only four respondents indicated difficulty with papers in their academic majors, most foreign students indicated that term papers in fields other than their academic majors posed the greatest challenge to them.

To determine the students' future writing needs, Kroll classified writing into sixteen tasks, three of which related to academic writing. Among the international students, 35 percent expected to write survey reports, 59 percent expected to write technical reports, and 48 percent expected to write reports of scientific experiments. For the native-speakers, the corresponding figures were 35 percent, 40 percent and 30 percent.

In conclusion, Kroll observes that the "traditional expository essay course" (freshman English?) does not expose the students to "many areas of written English" (p. 225), and strongly urges that

"students be given the opportunity to gain familiarity with modes of discourse they will be called upon to use" (p. 226).

While Kroll's survey dealt with international and American students at the freshman level, Ostler (1980) conducted her survey among international students ranging from freshmen to Ph.D. candidates. Ostler's survey, which was conducted at the American Language Institute of the University of Southern California, attempted to determine the students' assessment of their own academic skills needs as well as the students' "self-assessment of their success in using English in varied social and business settings" (p. 489). All the 133 students surveyed were enrolled in English as a second language (ESL) classes. Fifteen students (11 percent of the sample) majored in the hard sciences, and 44 students (33 percent) majored in engineering. Seventy-two percent of the students surveyed were undergraduates, while 26 percent were graduates.

The students were asked to choose from a list of sixteen academic tasks which might be required in various majors. The following writing tasks were included in the list: multiple choice examinations, essay examinations, lab experiments, book reviews, research proposals, and research papers. Statistics relevant to students majoring in hard sciences and engineering are summarized below.

TABLE 1

Writing tasks needed according to major*

Major	Hard Sciences	Engineering
Task		
M-choice exams	47	50
Essay exams	47	52
Lab experiments	60	65
Book reviews	33	43
Research proposal	27	43
Research papers	40	57

* all scores in percentages (from Ostler, 1980, p. 493)

The academic writing tasks according to class standing are indicated below:

TABLE 2

Writing tasks needed according to class standing*

Year in college	1-2	3-4	MA/MS	PhD
Task				
M-choice exams	53	22	37	20
Essay exams	47	56	53	40
Lab reports	43	33	13	20
Critiques	41	44	57	60
Research proposals	29	11	43	60
Research papers	53	78	60	80

* all scores in percentages (from Ostler, 1980, p. 495)

Based on the results of the survey, Ostler concludes that ESL courses should teach "specialized skills such as reading academic journals and papers and writing critiques" (p. 499). She also notes the distinct differences between the academic (writing) tasks assigned to undergraduate and graduate students. While undergraduates expressed a greater need for taking multiple choice exams and writing lab reports, graduate students were required to write critiques, research proposals and research papers more often.

In order to develop UCLA's Freshman Preparatory Program, Rose (1983) analyzed 445 quizzes, examinations, reports and papers assigned by 17 academic departments at UCLA, reducing the sample to eight "schemata" or "superframes." Arranged hierarchically from simple to more complex activities, the schemata were listing, definition, seriation, classification, summary, comparison/contrast, analysis and academic argument. Except for argument, the schemata corresponded to the intellectual domains of the cognitive psychologists. Analyzing his sample, Rose concluded that 1) most items required expository-transactional writing, while the balance required "academic" argument; 2) students had to deal with a great deal of information gathered from lectures and texts; 3) while in-

class examinations required a structured, "nearly regurgitative" response, the other assignments required the students to "reflect on a broad range of complex material, to select and order information in various contexts" (p. 111), and that 4) rhetorical conventions considered correct in one discipline may not be acceptable in another.

Stating that composition instructors should be better aware of student writing in other disciplines, Eblen (1983) conducted a survey at the University of Northern Iowa. The survey was designed to determine 1) the qualities which faculty value in student writing, 2) the problems which faculty encounter in student writing, and 3) to what extent "overall faculty standards for students' writing compare with the criteria established for a university-wide competency requirement" (p. 343).

A ten-page questionnaire was returned by 266 faculty members, 54 of whom were from Natural Sciences. Lab reports (57 percent were the most frequently assigned writing tasks by Natural Sciences faculty, followed by essay tests (43 percent), documented papers (23 percent), technical reports (20 percent) and analytical papers (18 percent).

Perhaps the most wide-ranging academic writing task survey was conducted by Bridgeman and Carlson (1984), who surveyed 190 faculty from 34 American and Canadian universities with a high enrollment of foreign students in order to determine the writing tasks faced by beginning undergraduate and graduate students. A 16-page questionnaire containing 6 major sections was used in the survey. The questionnaire sought information on 1) the academic departments surveyed, 2) the writing task demands of each department, 3) the criteria used to evaluate written assignments, 4) data on writing problems of native and non-native speakers, 5) use or potential use of a writing sample in the student admission process, and 6) the acceptability of ten specific task types listed in the questionnaire for use in the admission or placement of students at the beginning of graduate work.

Seven disciplines (departments) in which most foreign students enroll were targeted for the survey. The following departments were selected at graduate level: electrical engineering, civil engineering, computer science, chemistry, business administration, and psychology. Data regarding undergraduate writing was solicited only from English departments since "most writing at undergraduate level was done in English courses" (p. 18).

Respondents were given a list of nine writing tasks and asked to note the frequency with which each task was assigned. The relevant statistics for science and technology tasks are given in table 3.

TABLE 3

Frequency of Science and Technology Writing tasks

Writing task	Assignments per semester	Civil Eng.	Electrical Eng.	Chemistry	Computer Science
Lab reports	3-6	31	32	21	40
	7+	12	12	17	20
Brief summary of article	3-6	23	8	17	16
	7+	4	4	10	4
Brief research papers	3-6	27	4	7	16
	7+	0	0	0	3
Longer research papers	3-6	0	0	3	4
	7+	0	0	0	0
Expository/critical writing	3-6	8	0	0	8
	7+	0	0	0	8
Exams with essays	3-6	31	8	34	40
	7+	12	4	21	8
Group writing	3-6	4	0	0	4
	7+	0	0	0	0
Case studies	3-6	15	4	0	4
	7+	0	0	0	0

(from Bridgeman and Carlson, 1984, pp. 258-259)

Wallace (1985), whose dissertation describes the advantages of using an English for Specific Purposes (ESP) approach in undergraduate composition classes, used a questionnaire to survey faculty members from seven Illinois universities, selected for their "similar" non-native student enrollments. The focus of the survey was on undergraduate courses, and of the 123 faculty members who responded to the survey, 10 were from pre-engineering, 12 were from mathematics, and 13 each were from chemistry and computer science.

Wallace listed 15 writing tasks in the questionnaire, and requested the respondents to indicate how often each task was assigned to non-native students each semester. All the chemistry

professors assigned lab reports, and also considered lab reports to be the most important writing task. More than 50 percent of the computer science faculty assigned program documentation. Math faculty listed article summaries as the most frequent writing task they assigned. In pre-engineering, article abstracts were the most frequently assigned writing task, and the faculty thought that article abstracts and lab reports were the most useful writing tasks for their students.

Based on data obtained from the questionnaire, Wallace concluded that "non-native students need to be taught English through an approach that will foster research abilities, analytical thought, and exam taking strategies" (pp. 30-31).

Stating that "the form in which a writer expresses meaning [is determined] by the genre and the specific demands of the task" (p. 447), Horowitz (1986) set out to identify the writing tasks assigned in a variety of disciplines at American universities. Instead of surveying faculty or students with a questionnaire, handouts on which papers of any type, book or article reviews, and take home exams were assigned were obtained from 36 faculty members at Western Illinois University. The sample included 54 writing assignments from 29 courses taught in 17 academic departments, including home economics, biology, geology, and zoology departments generally categorized as belonging to science and technology.

Rather than listing them by genres (such as lab reports, article summaries, etc.), Horowitz classified the writing tasks according to seven categories, ranging from "summary of/reaction to a reading" to "research project". The classification, according to Horowitz, had "enough specificity to capture essential differences among tasks and enough generality to place into the same category essentially similar tasks. . . from different subject areas" (p. 449). Fifteen of the tasks fitted into the "synthesis of multiple sources" category, while "summary of/reaction to a reading" and "report on a specified participatory experience" contained 9 tasks each.

Noting that the most striking feature of the tasks was their controlled nature, Horowitz concluded that "generally speaking, the academic writer's task is to . . . find, organize, and present data according to fairly explicit instructions" (p. 455). Horowitz recommends that English for Academic Purposes (EAP) courses train students to 1) select relevant data from sources, 2) reorganize data in response to a question, and 3) encode data into academic English.

EVALUATION OF ACADEMIC WRITING TASK SURVEYS

For the purpose of evaluation, the above surveys have been placed into two categories: a) surveys which used questionnaires as the data gathering instrument, and b) surveys which examined the actual assignments given to students.

Surveys which used questionnaires

The surveys of Behrens (1978), Kroll (1979), Ostler (1980), Eblen (1983), Bridgeman and Carlson (1984) and Wallace (1985) belong to this category. The questionnaires in these surveys were directed at students and/or faculty members. As mentioned earlier, in most surveys, the determination of academic writing tasks was one of many objectives. Questionnaires directed at faculty attempted to measure faculty perceptions of students' writing abilities as well as the types and quantity of writing assigned to the students by the faculty. Eblen's objectives, for instance, were to determine faculty views regarding the quality and problems of student writing; Bridgeman and Carlson's lengthy questionnaire, besides seeking information on academic writing tasks, also attempted to determine how faculty evaluated students' writing, faculty perceptions of students' writing problems, and faculty views on the acceptability of a number of writing tasks in admission and placement tests at universities; and Wallace sought faculty views on the importance of various writing tasks as well as faculty perceptions of students' writing problems.

The surveys (and questionnaires) of Kroll, Ostler, and Wallace were directed at students. While Kroll attempted to determine the past, present and future writing needs of students, Ostler sought information on the language skills the students needed, and the students' assessments of their success in using English communicatively. Wallace's second questionnaire, which was directed at students, was meant to gather "each student's academic and career expectations" (p. 38) with regard to writing.

Questionnaires have been the most frequently used data-gathering instrument in survey research. In curriculum design, questionnaires not only provide information on the learners' needs, but also suggest to the learners that curriculum designers are

interested in their particular needs, and that an attempt is made to determine these needs in advance.

If a questionnaire is to serve its intended purpose, the data gathered must be accurate and reliable. A commonly used technique to ensure the accuracy and reliability of incoming data is to pre-test the questionnaire on a sample of respondents, which enables the researcher to eliminate areas of ambiguity before the final version of the questionnaire is sent out. However, of the surveys listed above, only Bridgeman and Carlson mention the use of questionnaire development strategies, whereby information gathered from a review of the literature, consultations with an advisory committee, and interviews with some faculty members were used in the formulation of the questionnaire items. Nevertheless, as the following evaluation shows, the Bridgeman and Carlson survey did not escape the shortcomings of all the surveys which used questionnaires.

Other than Bridgeman and Carlson, who were employees of the Educational Testing Service, all the researchers who developed and used questionnaires were associated either with mainstream English departments (Behrens, Eblen) or with English as a second/foreign language (ESL/EFL) programs (Kroll, Ostler, Wallace). When such researchers question students and faculty from other disciplines, the researchers tend to use terminology that they are familiar with to identify writing genres, which may not be identical with the terminology used by the faculty being queried. In fact, Swales (1986) states that "those who routinely or professionally operate within a genre are more likely to possess an overt knowledge of the conventions of a genre" (p. 4) than those who become involved in it only occasionally.

An examination of some terms used by the the researchers to identify academic writing genres illustrates this problem.

Behrens:	report; themes or essays; research papers.
Kroll:	papers integrat(ing) mathematical or statistical data with a report; reports of lab experiments in continuous discourse; term papers.
Ostler:	lab experiments, book reviews; research proposals; research papers.

Eblen:	lab reports; documented papers; technical reports; analytical papers.
Bridgeman & Carlson:	lab reports; article summaries; research papers; expository/critical writing; group writing; case studies.
Wallace:	article summaries; article abstracts; group writing tasks; case studies; analysis papers; comparison/contrast papers; documented research papers; lab reports.

A closer examination of one genre, the lab report, illustrates the confusion that could result from the use of questionnaires. The writing of a lab report requires a complex mixture of contributory skills such as summary, paraphrase, seriation, description, comparison and contrast, cause and effect, interpretation, analysis and the integration of mathematical and scientific data into a text. Thus, the researchers who list papers which integrate mathematical or statistical data (Kroll), or analytical papers (Eblen), or analysis papers and comparison/contrast papers (Wallace) separate from lab reports would not only be applying multiple terms to describe what is essentially a single genre, but would also confuse the respondents (faculty or students from other disciplines). The use of multiple terms suggests theoreticians' speculations of how academic discourse should be taxonomized, since not even book reviews and article summaries are self-explanatory terms.

Defining the genres on the questionnaire itself may have removed the confusion. Although Behrens did attempt this approach, he only defined three genres (i.e. reports, themes or essays, research papers) which may be inadequate to describe the variety of writing activities that students encounter in the academy.

While questionnaire designers appear to have used multiple terms to identify essentially similar writing tasks, faculty from separate disciplines sometimes used different terms to identify what is essentially the same genre. The ubiquitous lab report, assigned by instructors throughout the range of science and technology disciplines, best illustrates this phenomenon. A lab report may also be known as a "standard experiment" in chemical engineering, a "final" report in aerospace and petroleum engineering, a "technical report" in mechanical engineering, and a "memorandum" in electrical

engineering (Braine, forthcoming). Thus, the use of a variety of terms not only by the researchers but also by faculty members could only increase the inaccuracy of the data.

Earlier in the evaluation, Bridgeman and Carlson were mentioned as the only researchers to employ questionnaire development strategies. However, within the context of this paper (science and technology writing at the undergraduate level), the Bridgeman and Carlson survey reveals a significant lapse. Since their objective was to determine the writing tasks of beginning undergraduate and graduate students, Bridgeman and Carslon surveyed only the English department faculty at undergraduate level on the assumption that "most writing by first-year undergraduate students was done in English courses" (p. 255). Analyzing the data, the researchers conclude that "lab reports for first-year undergraduate students are apparently relatively rare" (p. 260), hardly a surprise since only English department faculty were surveyed! Thus, the survey is of little use in the design of integrated composition courses at the lower-division level.

Some researchers have admitted the shortcomings of their surveys. For instance, Behrens states that surveys like his "might be a more accurate measure of what people think (or claim to think) than what they actually do" (p. 60), while Eblen (p. 347) admits that "self-reports may blend respondents' beliefs and intentions with actual practice." Horowitz (1986) has found fault with some of the studies quoted above, claiming that "instead of trying to discover and classify university writing tasks - a logical prior endeavor - [the surveys] begin with a set of preconceived classifications, forcing on the respondents the particular schema used in the survey (p. 448).

Surveys which examined writing assignments

Two surveys, that of Rose (1983) and of Horowitz (1986), fall into this category.

Prior to the establishment of UCLA's Freshman Preparatory Program, Rose collected and analyzed 445 quizzes, examinations, reports and papers from 17 academic departments at UCLA. Overwhelmingly expository, the assignments were reduced to eight basic schema or superframes - "eight activities that all of us use to process information and make meaning" (Kiniry and Strenski, 1985, p. 192). The schemata, identified as listing, definition, seriation, classification, summary, comparison/contrast, analysis, and

academic argument, were to be used in a composition course which used the "recursive approach."

Rose's study and its applications to curriculum design display at least two shortcomings. First, the sample of writing assignments consisted of quizzes and examinations as well as take-home (non-examination) assignments. Since answers to quizzes and examinations are written under time pressure to a specific audience (i.e. course instructors) already familiar with the subject matter, masses of data can be regurgitated, often in a rambling and disorganized manner. Course instructors may care only for content, paying little attention to organization and style. On the other hand, take-home assignments in science and technology disciplines for instance, are of a highly controlled nature: teachers provide the topic, detailed instructions on procedural sequence and content organization, and in some courses, manuals which explain the writing task in more detail. Extensive data and background information, and reference articles and/or books for further reading, are also common features (Horowitz, 1986; Braine, forthcoming).

Unlike quizzes and examinations, a significant percentage of take-home assignments are designated for a real or hypothetical audience beyond the classroom (Braine, forthcoming). Thus, students not only follow prescribed formats as described earlier, but are often required to adapt their writing styles to suit a specific audience. Engineering majors, for instance, may be required to submit reports to a non-technical manager, and a microbiology major may be assigned to write a magazine article explaining the results of his/her research to a lay audience. Thus, the mere regurgitation of information acceptable in examinations will not be permitted in take-home assignments. Rose's decision to place these two types of writing into one category may therefore be open to question.

The second shortcoming in Rose's survey is the formulation of the schema or superframes. These schema, such as summary, classification, comparison/contrast etc., are only contributory skills to a broader writing task. For instance, a "book/article review" assignment requires summary, paraphrase and evaluation skills. Thus, the classification of academic writing according to contributory skills could fragment and thereby misrepresent the writing process.

Horowitz's (1986) analysis of assignments has a number of advantages over that of Rose. First, the survey dealt only with take-home assignments. Second, the academic departments and courses

from which the assignments were obtained are specified. Finally, the classification of assignments was not according to a contributory skills as Rose had done, but according to task. Horowitz's classification yielded seven categories which not only captured the essential differences between tasks, but also caught the similarities between tasks which may at first appear to be different. A closer look at the definition of one category illustrates the basis for Horowitz's classification.

> Report on a specified participatory experience . . . none of the data needed to be obtained from a reading, . . . students were assigned a specific "scene," either to observe passively or to participate in . . . They were also armed with a list of things to look for in that scene and a framework within which to interpret what they observed.
> The writing task itself usually involved reporting details of the experience . . . and then coming to some kind of conclusion about . . . the experience. This conclusion was also typically an answer to an explicit question. (p. 450)

The lab report genre falls within the above category. However, unlike "lab report", a term which may evoke different scenarios in varying contexts, Horowitz's category explicitly describes the activities that are required to perform the tasks, as well as the framework within which the task must be performed.

Thus, of the surveys discussed above, Horowitz's appears to be the only one which created an accurate classification after examining the data. However, Horowitz's data consisted of assignments from academic disciplines as diverse as marketing and biology, which ignores an important conceptual basis for composition research and pedagogy discussed at the beginning of this paper: each discipline is a separate discourse community with its own norms, conventions and rhetorical strategies. The inclusion of writing tasks from the humanities, the social sciences, business and science in a single classification violates the above concept, thus making the survey's usefulness to academic-writing curriculum design only marginal.

To sum up, the above evaluation has revealed the inadequacies of questionnaires as data gathering instruments in academic writing task surveys; analyses of assignments given to students have been shown to provide more accurate data. The need to separate examination papers from take-home assignments before writing tasks are classified has also been shown. Finally, the evaluation has highlighted the need to narrow academic task surveys to disciplines which have common norms, conventions, and rhetorical strategies, when the survey results are to be applied to the design of composition courses.

CONCLUSION

In an incisive essay which examines the role of English departments in academic writing instruction, Blair (1988) concludes that English departments, because they impose their own "brand" of English on students from other disciplines (a subtle form of linguistic oppression, according to Blair), should not have a special role in academic writing instruction - not even for freshman English. Instead, Blair suggests that faculty from the disciplines should be responsible for the teaching of writing within each discipline. This idea has found support from Spack (1988), an ESL/EFL specialist.

Although writing-across-the-curriculum (WAC) programs (which encourage teachers in all disciplines to make writing part of the teaching and learning process in their courses) have been in existence for some time, Fulwiler (1984) contends that "increased teaching loads, large classes, administrative responsibilities, lack of collegial support, pressures to research, publish, write grants" (p. 115) may prevent faculty from practicing the precepts of the WAC movement. The focus of "writing" courses taught by non-English faculty may be on the written product (assigning grades to students' essays) than on the writing process (Mitchell, 1987). Thus, the "teaching" of writing is still largely the responsibility of the English departments, and the composition courses at lower-division level could be the last opportunity for many students to learn academic writing. The increasing number of "Writing in the Disciplines" courses now being offered by universities nationwide is evidence of the English departments' awareness of the writing needs of their students. However, unless the designers (and teachers) of these courses are truly aware of the norms, conventions, and rhetorical strategies of academic discourse, the courses will only teach the English departments' conception of interdisciplinary writing, pseudo-academic even at its best.

Since each discipline is considered a separate discourse community, composition courses which aim to teach academic writing should focus only on one discipline. That is, separate academic writing courses (such as "Writing in Electrical Engineering", "Writing in Chemistry" etc.) would be needed for students of each discipline. However, for logistical reasons, such narrowly focused courses cannot be centralized within English departments. Instead, composition courses that deal with broader

areas like science and technology, business, and social sciences, for students who major in those areas, is a distinctive possibility. And if such courses are to be successful, course designers and teachers must be aware of the true nature of the writing in those disciplines, an awareness which can come only from academic writing task surveys that provide accurate and reliable data.

Perhaps the most significant aspect of the academic task surveys discussed above is that none focused on science and technology disciplines, an area which not only continues to attract a significant proportion of both foreign and American students, but which also has its own norms and discourse conventions. The same could be said for business and social sciences. If composition courses are to succeed in their aims, a fresh approach to curriculum design, using carefully planned academic writing task surveys, is a must.

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